1 Feb. 25, 2008

Present: J. P, Alexandre, Karl. We met to discuss preparations for the upcoming Hall A planning meeting on March 3.

2 Septa Magnets

The biggest question we need to address is what configuration of Septa we can use for the experiment. We need to evaluate 3 scenarios:

1. Two Cold Septa.
2. One Cold Septa.
3. Two Warm Septa.

Scenario 1 is preferred because it's the only one that does not negatively impact the physics goals of the experiment. We need to see which of the other two alternatives is the 'least worst', if the first is impossible. There's no possibility to decouple the two warm septa; they must be run together. Karl will run kinematics and rates. J.P. asks Karl to clarify some issues with the proposal rate estimates.

The hypernuclear experiment (J. Lerose) will probably also request use of the cold septa. Lead Parity (PREX) will use the warm septa. They only need 800 MeV, but the smallest possible angle (5.5-6°). The low Q^2 FF measurement is C3 so will run with whatever has less installation overhead. The B(Q^2) experiment was deferred with regret. It needs smallest possible angle (5.5) and 3.0 GeV.

2.1 Cold Septa

We will not need vacuum coupling for the septa. At our lowest momentum settings, we may begin to have some problem with multiple scattering. To address this, we can flow helium through the septa, as was done in sagdh.

Cold Septa status: Left septum in pretty good shape, but needs a little work. The right needs significant work. It was modified to use a large valve, which probably needs to be fixed. Previously, a chemwipe was found in the piping, and it may still have further blockage. Paul believes that the left arm does not have a high cryo load, and that the draw of the right arm is an order of magnitude larger. This can't be proven, however, because there was only a single flow meter monitoring both septa during the previous installations. The best time to fix the cold septa would probably be during the extended summer down that begins June 9th, before Transversity. Ed would have 1-2 months to work on it then.

We need to obtain the training record of the cold septa from Paul or Ed.

One big issue is whether there will be sufficient coolant available at run time. That is, are we compatible with QWEAK if we use the cold septa?

2.2 Warm Septa

The warm Septa can handle 3.0 GeV at the high end (in principle). The angular range is 5.5-8° with a bite of ±1.5°. There is no mechanical movement needed to change angles with the warm septa, only a change in current, and an associated change in HRS angle. We should evaluate E0=3.3 GeV and 8 degrees, which is the best scenario we could hope for. Even this would entail loss of our highest kinematic band, and rely on operation at the edge of design range.

3 Target

Karl will produce summary of the information Don provided.

4 Beamline & Beamdump

We don't need to produce a cost/time estimate, just a thorough list of what is needed. We should incorporate any relevent information from the TAC review.

Alex will finalize the design this week. Open issues include:

1. Should the chicane magnets be above or below beamline. For the below beamline scenario, Alex believes we will hit the Hall floor after the target. Need to check with Pavel for rad levels. This *might* be acceptable with our low current.

2. Do we install a single movable beampipe (as in Hall C), or two beamline pipes, with one fixed for straight-thru passage? Kess seems to prefer

the additional straight-thru pipe to simplify beam steering etc, without the target magnet. The two pipes would share the same vacuum. J.P notes that vacuum coupling with moveable pipe is possible but can be difficult.

3. How many new BPMs/BCMs are needed? How much support electronics? Time to install?

4. The slow raster ($\approx$ 100 Hz) in our present design is now closer to the target than in Hall C. We have slow raster at 12 m distance for 4.4 GeV, while they have it at 20m for 6 GeV in order to get 2.5cm raster for SANE. It should be ok (6/4.4 * 12m = 16.4 m), but we need to check.

   The fast raster($\approx 10 - 20$ kHz) will not be used by us. Hall A typically uses a diffuser to prevent damage to the beam dump. Hall C used to use a slow raster for this purpose, but now uses a diffuser also. This device is unneccesary for our experiment due to the low current.

   J.P. notes that it took three months to install and commission the slow raster in hall C.